Impact of 12 Week Obesity Educator Program on Eating Habits and Body Composition Amongst Obese Menopausal Women

SHORT SYNOPSIS

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Certificate

I hereby declare that the short synopsis "Impact 12 Week Obesity Educator Program on Eating Habits and Body Composition Amongst Obese Menopausal Women" being submitted in partial fulfilment of the requirement for the degree of Doctor of Philosophy in Nutrition and Dietetics under faculty of Applied Sciences of Manav Rachna International Institute of Research & Studies, Faridabad during the academic year 2018. It is a bona fide record of original work carried out under the supervision of Dr. Moattar Raza Rizvi and has not been submitted in full or part to any other university or institute for degree or diploma. Further, it is certified that short synopsis is plagiarism free and proof has been submitted.

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ABSTRACT

The objective of this study is to assess the "Impact of 12 Week Obesity Educator Program on Eating Habits and Body Composition Amongst Obese Menopausal Women." There are very few educator programs that have been developed in the field of obesity and menopause education. Hence, the purpose of this program will be to educate obese menopausal women about the consequences of obesity and its prevention techniques. This program will also explain how to maintain a healthy body weight and will encourage women to create awareness amongst their peers suffering from the same condition. Accordingly, the research study will be done in three stages: in the first stage, a pretested questionnaire will be formed to get accurate information from the subjects. In the second stage of the 12 week obesity educator program will be conducted to educate obese menopausal women about obesity and menopause and in the third stage evaluation of the impact of the developed obesity educator program will be done through post-test. Data will be analyzed by using SPSS version 20 software. Quantitative data will be analysed using Pearson's correlation to establish the relationship between two measurements and qualitative data will be calculated by using chi-square test.

Key Words: Obesity, Menopause, Obesity Educator Program, Anthropometric Measurements, Menopausal women.

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1. INTRODUCTION

1.1 Menopause and its Effectiveness

Menopause is characterized as a general 12-month cessation or duration equal to three previous cycles or cessation of ovarian function resulting in permanent amenorrhea (Padubidri and Daftary 2002). Menopause is a crucial stage in a woman's life cycle. during which various physiological changes take place. Menopause is defined as the physiological termination of the menses caused by defective ovarian function, which may be diagnosed after the passing of a year without menses. Altering nutritional status often has an impact on the symptoms of menopause, which is why it becomes an important factor in leading a healthy life during menopause. Menopausal women may experience increased body fat mass and redistribution of limb fat mass to a more central or android position. These changes increase diabetes and cardiovascular risk. Premenopausal, perimenopausal, and postmenopausal women's nutritional status is not available as well. The menopause age for women in India is 40-55 years. Hence the studies with respect to this cohort were analyzed in this segment which involves menopausal symptoms, nutritional parameter association, diet, anthropometry, biochemical variables, and integration impact. Metabolic changes in menopausal women are linked to menopausal transition, specifically weight changes, waist circumference, body fat distribution, energy consumption, and circulating biomarkers like adipokines. (Polotsky and Polotsky, 2010).

1.2 Three Stages of Menopause: Pre-menopause, Perimenopause, and Post-menopause

- Pre-menopause and perimenopause are also used in place of each other. "pre" means "before and "peri" means "surrounding" or "near".
- Perimenopause usually occurs 3-4 years and as early as 10 years before a woman enters menopause. During this time, the amount of estrogen in the ovaries decreases. Perimenopause starts around the age of 40, but some women may experience perimenopause in their 30s. (Wilson 2018).
- Estrogen development in ovaries slows dramatically during menopause. Perimenopause symptoms can continue until menopause. The next stage of menopause is post-menopause. A menopausal woman may experience the symptom of depleted estrogen levels at this stage.

1.3 Symptoms of Menopause

Menopause symptoms may be distressing. Hormonal changes induced by menopausal transition affect various biological processes. Certain Menopause symptoms involve disorders linked to the central nervous system, metabolism, weight, circulatory system, muscular and skeletal changes; excretion, skin atrophy; and sexual dysfunction. The physiology of these symptoms is linked to the depleted estrogen output. Moreover, recent research has demonstrated that how some menopausal symptoms can be related to other conditions and thus may act as predictors of potential health risks in postmenopausal women. (Monteleone, Mascagni, Giannini, Genazzani, 2018). Specific symptoms associated with decreased estrogen levels include joint and muscle pain, allergic reactions, breast pain, depression, anxiety, mood fluctuations, extremely dry skin, facial hair, hair loss, headaches, migraines, heart palpitations, heavy or mild bleeding during periods, hot flushes, irregular menstruation, fretfulness, reduced metabolism Osteoporosis, heart and vascular disease, and other orthopedic disorders are long-term manifestations. Menopausal changes that occur in women affect various facets of their health, such as a reduction in physical activity, sleep disturbances, reduction in social interactions, and detrimental effects on their health-promoting behaviors. As age increases, metabolism becomes slow and body fat increases, which may lead to heart disease, cancer, hypertension, and diabetes (Poomalar and Arounassalame, 2013).

1.4 Health-Related Problems with Menopause

Many chronic diseases such as heart disease, hypertension, and osteoporosis are the major cause of menopause mortality among women. poor calcium absorption and deficiency due to hormonal variations in menopausal women may cause bone-related disorders like osteoporosis and osteopenia. Saturated fats and cholesterol-enriched diets raise the risk of heart disease and other health-related problems. There are various health complications that arise from a poor lifestyle and a lack of awareness about self-care. Attempts should be made to foster menopausal women's well-being as well as to prevent health issues among them. (Heid enereich, 2014).

1.5 Association of Obesity and Menopause

Weight gain is one of the main problems in menopausal women. Body fat distribution changes due to decreased levels of estrogen which eventually leads to weight gain. Low levels of estrogen

production disturb the metabolism which results in changing their waist-hip ratio, glucose intolerance, unusual lipid levels, high blood pressure, hormonal dysfunction, and vascular inflammation (Rosano et al 2007). As a result, obesity at menopause ends up in type 2 diabetes, heart disease, and mortality. There are many consequences of obesity that include breast cancer, endometrial carcinoma, gallstones, osteoporosis, kidney stones and enhance mortality. Women with an android pattern of obesity have personal life discontentedness, memory problems, stress, sleep disorder, muscular pain, bloating, and premature death. Estrogen plays a vital role in the reproductive system as well as in the cardiovascular, nervous, and skeletal systems. The estrogen hormone in the body also controls weight gain. Low levels of estrogen in post-menopause have detrimental effects on the body. Low levels of estrogen, less physical activity, and the desire to eat more trigger the metabolic rate that increases the risk of obesity in menopausal women. (Poluzzi et al., 2014). The risk of weight gain and obesity increases in the body during menopause due to hormonal changes and hence it increases the risk of metabolic and heart diseases. (Brończyk-Puzoń, et al.2015) Obesity is a fast-growing issue universally. In postmenopausal women, belly fat and obesity are common issues. The main cause of central adiposity during the menopause transition is the low levels of estrogen that lead to changes in body composition and redistribution of body fat. Obesity and visceral adiposity boost markers and adipokines. Visceral adiposity can develop numerous health issues such as dyslipidemia, multiple metabolic syndromes, increased cardiovascular disease risk, malignancies, and mortality. The most important strategies for the management of obesity are exercise, portion control, and treatments such as pharmacotherapy and bariatric surgery. Current research is inadequate and further research is required on the etiology, pathophysiology, and management of this growing menopause-related adiposity issue (Atapattu, 2015).

1.6 Obesity Educator Program and its Role to Prevent Menopausal Obesity

"The epidemic of obesity has been developing in virtually all OECD countries over 30 years. Strong evidence suggests that such an epidemic has affected certain social groups more than others. In particular, better education appears to be associated with a lower likelihood of obesity, especially among women. There is a strong correlation between education and obesity". (Devax, Marion, et al.2011).

Educating obese menopausal women about a healthy lifestyle can help them keep fit and boost their total well-being. The way in which such programs are created, a reduction in complications of obesity in menopausal women can be seen. This will inhibit diseases, and improve physical and mental health (Haghani, Shahnazi, Hassanzadeh 2017) showed that education that uses age-appropriate methods like showing animations and/or role play, improves the lifestyle of the students. Restrictions in calories, changing eating habits to a diet consisting of 1300 to 1400 kcal/day, calcium, iron, and antioxidant-rich food can help during menopause; lifestyle modification can facilitate the prevention of obesity and many degenerative diseases. One of the major recommendations is to exercise on a regular basis for a minimum of forty-five minutes per day for five days a week to increase energy expenditure. Yoga, meditation, swimming, dancing, jogging, and weight training can increase their strength, resistance, and muscle mass. Obesity educator programs may be helpful in establishing good living habits, providing relief from symptoms of menopause, losing weight, and improving cardiovascular functions.

1.7 Health Benefits of Weight Reduction in Menopausal Women

- Improve muscle mass
- Decrease in bone loss
- Increase in flexibility and coordination
- Improve menopausal symptoms
- Decrease in depression
- Decrease in risk of strokes
- Decrease in the incidence of type 2 diabetes
- Fall of systolic and diastolic blood pressure in hypertensive patients
- Improve insulin resistance
- Fall in premature deaths because of obesity
- Fall in low-density lipoprotein and rise in high-density lipoprotein

In a study by (Riesco et al.2008) in post-menopausal women Changes in lipid-lipoprotein indicators, eating patterns and health-state components were lower than the pre-menopausal women, indicating that the status of menopause affects some metabolic and behavioural weight loss responses.

2. Literature Review

Foster-Schubert et al. (2012) did research on the most successful techniques for weight loss and its maintenance methods are combined therapy of its treatment with providing a low-calorie diet (LCD), increase physical activity, and behavioural therapy. 439 sedentary postmenopausal women were selected for the 4-arm randomised study to assess the effect of a low-fat low-calorie diet (D), moderate intensity, facility-based aerobic exercise (E), or a combination of both (D+E) and change in lifestyle management (C) on body weight and compositional change. The weight loss target is less than 10% given in Group-based dietary intervention and excessive intervention consists of aerobic exercise for 45min 5 days a week. This study showed that the improvement in the postmenopausal female lifestyle combines diet and practice over one year and improves weight and fat.

Hassan, El-Masry (2014) explored the three types of obesity treatment protocols LCD, physical activity, and acupuncture (or laser acupuncture). Dietary intervention participants have seen major increases in anthropometric measurements, umbilical and diastolic fat (decreased) blood pressure, and minimal blood sugar and lipid profile changes. According to the researcher, acupuncture treatments change the abdominal fat, lipid profile (total cholesterol and LDL decreased and HDL increased), decrease blood sugar. Those who had undergone laser intervention showed substantial improvement in all anthropometric measures under review, umbilical visceral fat, blood pressure, and lipid profile parameters (decreased total cholesterol and LDL).

Tandon (2014) examined the impact of lifestyle modification on post-menopausal overweight obese Indian women in randomized 24 weeks of Study. They strongly recommended for lifestyle management be integrated with post-menopausal women's everyday routine under guidance and inspiration, commitment to lifestyle management, goes a long way to escape the danger of obesity and its associated complications.

Lee, Jeon, Kim (2014) investigated the 12-week intervention impact on the clinical characteristics and dietary intakes of young and obese with behavioural modification, with those reasons, were identified for successful weight loss. The objective of this research was to lose 0.5 kg/week and 300-500 kcal/day, with increased physical activity. 44 Obese & 19 normal-weight subjects

completed the intervention of 12 weeks. Obese subjects were divided into 5 groups and 6 counseling sessions. This research aimed at weight loss and calorie reduction by 0.5kg/week and300-500 calories/day respectively in addition to increased physical activity.

People participated in food intake and exercise pattern assessment therapy sessions. Baseline and week 12 examined anthropometric, clinical, and 3-day dietary data. Levels of triglyceride and free fatty acid in the obese population fell outstandingly after getting the intervention. Power, fat, and cholesterol intake in obese decreased significantly. Effective weight loss was influenced by many factors such as active participation target setting for weight loss and weight after leaving school. They concluded that the 12-week behavioural therapy intervention resulted in lower energy and fat intakes, resulting in significant weight loss and changes in obese clinical features. Those who were obese in their childhood suggested early intervention therapy.

Pilch, Mucha, Ambroży (2015).

The research aimed to determine the impact of a physical exercise program on improving the body composition, and lipid and carbohydrate status in postmenopausal women Physical activity curriculum included 12-week Nordic Walking (NW) and gymnastic-dance lessons (G-D). This 12-week physical activity program significantly lowered the total cholesterol and low-density lipoprotein (LDL) levels and increased the good cholesterol high-density lipoprotein (HDL) cholesterol levels. while triacylglycerol (TG) values did not alter. The average glucose levels in the blood depleted dramatically. Related insulin-level changes were reported. The biometric-structural indices analyzed did not alter significantly. They concluded that the implemented 12-week physical activity program without altering dietary patterns led to improved plasma lipid profile and increased insulin sensitivity, but did not significantly affect body composition.

El-Mekawya, ElDeeb, Ghareib, (2015) examined the impact of laser acupuncture and dietary intervention on metabolic syndrome features (MetS). A combination of Laser acupuncture and dietary intervention reduced insulin levels in TC and fasting. Results indicate that this combination of interventions in postmenopausal women would help boost abdominal, and lipid metabolism, and glucose-insulin homeostasis. India is a fast-growing economy experiencing significant epidemiological, nutritional, and demographic shifts. These transitions tend to encourage obesity in all ages. However, there is no consistent pattern when looking at obesity prevalence alone.

Median values ranged from 5.5% in 2005-2010 to 4.0% in 2011-2014 and then increased to 4.6% after 2010. This indicates that obesity prevalence has actually been relatively stable in recent decades. Overweight and combined overweight/obesity prevalence, however, showed a growing trend. The prevalence of overweight increased from 9.7% before 2001 to 13.9% registered after 2010. The cumulative trend followed a similar pattern, rising from 15.9% before 2001 to 16.3% from 2013-2016. The value then rose to 17.4 percent in the 2006-2010 cycles, eventually hitting 19.3 percent in post-2010 studies. Therefore, a rise in overweight among children/adolescents in India occurred.

Nishiwaki, Kawakami, Saito, Tamaki, Ogita (2016) investigated the effect of exercise training on postmenopausal women's body composition and circulating adiponectin levels under mild hypoxic conditions. Fourteen postmenopausal women (56 ± 1) were listed for the normoxic or hypoxic group (H). Aquatic workout preparation was conducted for 30 minutes per training session, 4 days a week, 8 weeks at 50% peak oxygen. At 2000 m above sea level H group performed exercise under the condition of hypobaric hypoxic. No improvements were seen in the N group for any of the calculated values. They concluded that exercising for a short time in mild hypoxic conditions in menopausal women showed a drastic decrease in weight and an increase in adiponectin levels.

Finocchiaro et al (2016) noted that dietary intervention decreases BMI and waist circumference and improves healthy lifestyles in breast cancer survivors. This research followed up on 100 breast cancer patients. The intervention program comprised four one-week meetings including seminars, training sessions, and workshops. BMI improved dramatically, and waist circumference was observed after 2-6 months.

Kwon, Nam, and Park (2017) examined the effect of a rigorous 12-week dietary and exercise program on obese women's body structure. Further, they examined the residual effect after surgery. 30 participants were studied with an obese body structure of women having over 25 kg/m2 body mass index with more than 30 percent body fat. Two groups based on weight cycling history (WC); were assigned. One was the WC group (about ±5 percent of original body weight) and the other was the NWC group. Both groups completed a 2-week dietary intervention program, including a 12-week mandatory exercise intervention. Nutrition/exercise therapies were subsequently

discontinued for 12 weeks after which hormone levels were checked for energy metabolism and stress, meal intake, eating habits, sodium intake information, sodium intake frequency, and quality of life (QOL). Hormone levels, In the WC population hormone levels, meal intake and QOL scores were higher as they demonstrated that sticking to dietary patterns significantly affects weight loss and its maintenance in those people who often make efforts to lose weight and thus undergo an endless loop of weight recycling.

Kassim, Manaf, Ambak. (2017) studied that lifestyle interventions resulted in moderate weight loss, thereby reducing BMI and blood pressure with a six-month response. 18-59 years old 328 obese with low-income group housewives were recruited for this quasi-experimental study.

Xi, Mao, Chen, & Bai (2017) studied that a 12-week diet and exercise supervision health education intervention may enhance perimenopausal symptoms and help patients develop healthier lifestyles. 60 menopausal patients underwent this randomized controlled trial and were divided into two groups intervention group and a control group. Each group had 30 participants.

Tiznobaik, et al. (2018) examined the impact of therapy on menopausal women's lifestyle and their partners. 120 consecutive Iranian couples (menopausal women and spouses) residing in Hamadan have undergone an intervention. Those participants were allocated randomly and counseled as an intervention group. Their lifestyle assessment was done pre and post-counseling sessions (first (2 months later) and second (2 months later)). The monitoring committee received no guidance. A total of five meetings per hour were scheduled for home therapy. Eating patterns and baseline physical activity scores were substantially identical between the two classes. However, both dietary habit and physical activity scores increased significantly in the intervention group after daily therapy, although these scores remained unchanged in the control group. The therapy concluded, thus, that both menopausal women and their partners have beneficial effects on lifestyle change in improving dietary habits and physical activity.

Rathnayake et al (2019) researched lifestyle health promotion as a significant predictor of the postmenopausal status of women. The efficiency of lifestyle education in Sri Lanka was calculated in observing health promotion and improving health status. A quasi-experimental study with random, matched socio-demographic status assigned as experimental 72 PMW from two

geographically distinct areas in the Galle District, Sri Lanka (N = 377 PMW). Postmenopausal health management education intervention with lifestyle changes for the experimental population was administered over a span of 8 weeks and the health education kit was distributed. No planned curriculum was given to the control group. Both groups had a 6-month follow-up. They concluded that lifestyle change-based intervention in health education was effective in improving HPB adherence and enhancing PMW health status. This will profoundly influence lifestyle medicine.

3. Description of Broad Area

Obesity is a problem that affects individuals of all age groups. Excess body weight may be of social and psychological importance for menopausal women as it affects their day-to-day life and sexual activities. Depleting body fat and providing education on obesity management are crucial for obese menopausal women (Brończyk-Puzoń et al., 2015). Research indicates a direct correlation between weight gain during menopause and a heightened risk of obesity-related diseases, particularly malignant tumors. Understanding the causes and mechanisms of obesity during menopause suggests preventability. Effective management involves adopting a healthy lifestyle and considering hormonal therapy (Kozakowski et al., 2017).

The 12-week program aims to assist menopausal women in losing weight and enhancing their lives. Participants will attend weekly 1-hour group sessions covering weight reduction, healthy eating, and increased physical activity. Emphasis is on a 1200-1400 kcal/day low-calorie diet, with provided sample plans. Modules will offer information on obesity, menopause, their consequences, health benefits of weight loss, and tips for long-term weight maintenance. This approach equips women with knowledge and tools for sustained weight management and improved well-being.

The present study will evaluate the impact of the obesity educator program using face-to-face classroom interaction and the internet, whether this program reduces weight and improve the eating habits of obese menopausal women over 12 weeks.

Statement of problem:

The high prevalence of obesity in menopausal women poses a significant health concern, impacting well-being and leading to potential issues with eating habits and body composition. Despite recognizing these challenges, there is a notable gap in understanding the effectiveness of targeted intervention programs, specifically those involving obesity education. This study aims to investigate the impact of a 12-week obesity educator program on eating habits and body composition among menopausal women, addressing the lack of comprehensive research in this demographic. This gap hinders the development of tailored strategies to mitigate the adverse effects of obesity during menopause. By examining the intervention's effectiveness, this research aims to provide valuable insights for informing future healthcare practices and interventions to improve the health outcomes of menopausal women dealing with obesity-related issues.

4. Aims and objectives

This research aims at finding the impact of 12 week obesity educator program on eating habits and body composition amongst menopausal women.

Objectives

The research objectives are:

- Assess the knowledge, attitude, and practice of the subjects regarding their health and wellbeing.
- Conduct a 12 week obesity educator program for the selected subjects by using effective educational tools.
- Assess the success of a 12-week obesity educator program by comparing the differences in body composition and eating habits of the subjects from pre to post-test.

Null Hypothesis (H_0):

- There is no significant difference in knowledge, attitude, and practice related to health and wellbeing among menopausal women before and after the 12-week obesity educator program.
- The 12-week obesity educator program, implemented with effective educational tools, does not lead to a significant change in the subjects' eating habits and body composition.
- There is no significant difference in body composition and eating habits among menopausal women before and after the 12-week obesity educator program.

Alternate Hypothesis (H_1):

- There is a significant difference in knowledge, attitude, and practice related to health and wellbeing among menopausal women before and after the 12-week obesity educator program.
- The 12-week obesity educator program, implemented with effective educational tools, results in a significant change in the subjects' eating habits and body composition.
- There is a significant difference in body composition and eating habits among menopausal women before and after the 12-week obesity educator program.

5. Material and Methodology

The present study will be undertaken to assess the impact of a 12-week obesity educator program on the eating habits and body composition of obese menopausal women. The dietary survey, anthropometric measurement, and clinical examination will be the methods used to assess nutritional status. The material and methods will have been discussed under the following headings.

Research Design

Pre and post-test Intervention study.

Study Location

The present study will be carried out on 289 obese menopausal women residing in New Delhi and NCR.

Study Sample

Pre, peri, and post-obese menopausal women.

Sampling Technique

Menopausal obese women will be selected by a simple random sampling technique.

Sample Size: 289 subjects from different opd's /households/clinic setups based on alpha =0.05, and p=0.7509 have been selected as per the formula by (Danial 1999 (p192); Khokhar, Kaur, & Sidhu 2010).

Inclusion Criteria

- Pre, peri, post obese menopausal women

Exclusion Criteria

- Intolerance or food allergy
- Excessive alcohol consumption
- Smoking

- Renal and hepatic disease
- Use of medication known to affect body weight

Methods and Tools

For the present study, the questionnaire cum interview method will be used as it is an appropriate method for acquiring the necessary information. While framing the questionnaire it will be kept in mind that the questionnaire will be short and simple to understand by the respondents. The purpose of the questionnaire will be to provide a standard tool for observation. The questionnaire will be designed as a memory tickler that would facilitate the work of tabulation and analysis. Tools for research will be face-to-face classroom teaching, online teaching using ppts, booklets (Hindi and English), and social media.

Formation of the Questionnaire for the Collection of Data

The study will be conducted in three phases. The data will be collected by questionnaire-cum-interview method. The information regarding dietary and general information will be collected in three phases. Anthropometric measurement and medical examination will be carried out during the visiting hours.

Stage 1 (pre-intervention phase): In this phase, a pretested questionnaire will be formed to get accurate communication and response from the subjects. The formation of the questionnaire will be to involve extensive thinking and rethinking and paying attention to the aims of the study. An open-ended and structured questionnaire will be drafted with definite and concrete questions. The following parts will be considered in the questionnaire.

1. General information.
2. Anthropometric measurement
3. Eating habits.
4. Food preferences.
5. Severity of menopausal symptoms.
6. Medical examination.
7. Physical activity and exercise.

General Information

General information will be obtained from the obese menopausal woman and her family. The general information will contain education level and some socio-demographic variables including age, marital status, job level, and monthly income evaluated properly using an appropriate questionnaire.

Anthropometric Measurement

Height: A stadiometer will be used to measure height.

Weight: Digital weighing scale will be used to check the weight of the subjects.

Waist Hip Ratio (WHR): weight and hip ratio will be obtained by dividing the waist circumference by the hip circumference. An anthropometric tape of 100 gm tension will be used to measure Waist and hip circumferences. It determines how much fat is accumulated on the waist and hip area.

The Formula to Calculate Waist Hip Ratio is given below:

WHR= waist circumference(cm)/hip circumference(cm)

The following cut-off values of WHR will be taken for the evaluation of abdominal obesity in the subjects (Snehalatha, Viswanathan & Ramachandran 2003).

Waist Hip Ratio (WHR)

Normal	Abdominal obesity
<0.81	>0.81

Medical Examination

Medical Examination will include medical history review, blood tests (hba1c and HB), and blood pressure measurements of each subject and it will be done by a registered physician to check the symptoms of any deficiency disease.

The Severity of Menopausal Symptoms

The menopause rating scale will be used to calculate the seriousness of menopause symptoms (Heinemann, Potthoff &Schneider 2003).

Diet Survey

Information regarding dietary intake, eating habits, and food preferences will be given by the subjects. A food frequency questionnaire and 24 hours dietary recall will be used to evaluate the calorie intake. Which will estimate the average daily nutrient intake of the subject during the period of three months.

Physical Activity & Exercise

The information regarding the daily routine activity and its impact on the normal life of obese menopausal women will be recorded.

Stage 2 (intervention phase): A 12-week obesity educator program will be conducted to educate obese menopausal women about obesity and menopause.

Stage 3 (post-intervention phase): evaluation of the impact of the developed obesity educator program will be done through the post-test.

Development of Obesity Educator Program for Obese Menopausal Women

The obesity Educator Program will be carried out for 12 weeks.

1. During the intervention phase, teaching aids will be designed to suit the subjects.
2. Diet will be sent as an intervention to each subject through WhatsApp and email.
3. One hour-long weekly session will be held for the obesity educator program.
4. In the post-intervention phase anthropometric measurements and medical examination for HbA1c, and HB will be done again.
5. The Menopause Rating Scale will be used to test the seriousness of menopause symptoms before and after the program.
6. In the post-intervention phase, a pre-tested questionnaire will be used as the standard tool to identify subjects in acquiring desirable knowledge, attitude, and skills.

Collection of Data

- Health screening will be done by visiting OPDS/clinic setups/households in Delhi and NCR.
- Each subject will be acquainted with the protocol, risks, and benefits of the study.
- All subjects will be given their written consent to take part in the research study.
- Obese menopausal women who wish to reduce weight and improve their health will be recruited.
- Data will be collected using a questionnaire from obese menopausal women.

Analysis of Data

Data will be analyzed by using SPSS version 20 software and will be expressed as mean and standard deviations. Quantitative data will be analyzed using Pearson's correlation to establish the correlation between the measurements and qualitative data will be calculated by using the chi-square test.

6. Significance of study

This study holds significant importance in addressing the critical issue of obesity among menopausal women, a demographic where the prevalence of obesity poses substantial health concerns. The research's emphasis on evaluating the impact of a 12-week obesity educator program fills a crucial gap in understanding the effectiveness of targeted interventions, particularly those integrating obesity education. The findings of this study can contribute vital insights that have the potential to shape future healthcare practices and interventions specifically tailored for menopausal women. By shedding light on the efficacy of the proposed 12-week program in influencing eating habits and body composition, the study aims to provide actionable information for healthcare professionals, policymakers, and educators. Ultimately, the outcomes may aid in the development of more nuanced and effective strategies to address and alleviate the health challenges associated with obesity during the menopausal transition, thereby positively impacting the overall well-being of this demographic.

7. Expected Outcome

This 12week obesity educator program will provide intervention as well as educate the obese menopausal women about the consequences and prevention of obesity during and after menopause. The program will also explain how to maintain a healthy weight and will encourage women to create awareness among those who are suffering from the same condition.

This program will have significant improvement in knowledge of the subjects about obesity and menopause from pre-test to post-test. One of the most important effects of this study will be that obesity and menopausal symptoms can be improved in subjects after this program.

Web-based individual interaction using both classroom teaching and the internet will improve eating habits and body composition of obese menopausal women during 12 weeks.

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by

Rupal Kumar

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Under the supervision of

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ABSTRACT

The objective of this study is to assess the "Impact of 12 Week Obesity Educator Program on Eating Habits and Body Composition Amongst Obese Menopausal Women." There are very few educator programs that have been developed in the field of obesity and menopause education. Hence, the purpose of this program will be to educate obese menopausal women about the consequences of obesity and its prevention techniques. This program will also explain how to maintain a healthy body weight and will encourage women to create awareness amongst their peers suffering from the same condition. Accordingly, the research study will be done in three stages: in the first stage, a pretested questionnaire will be formed to get accurate information from the subjects. In the second stage of the 12 week obesity educator program will be

conducted to educate obese menopausal women about obesity and menopause and in the third stage evaluation of the impact of the developed obesity educator program will be done through post-test. Data will be analyzed by using SPSS version 20 software. Quantitative data will be analysed using Pearson's correlation to establish the relationship between two measurements and qualitative data will be calculated by using chi-square test.

Key Words: Obesity, Menopause, Obesity Educator Program, Anthropometric Measurements, Menopausal women.

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